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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/768,366	01/29/2004	Su-Chen Fan	JCLA5041-CIP	6541

J.C. Patents
Suite 250
4 Venture
Irvine, CA 92618

7590 04/26/2007

EXAMINER

MCDONALD, RODNEY GLENN

ART UNIT	PAPER NUMBER
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1753

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/768,366	Applicant(s) FAN, SU-CHEN	
	Examiner Rodney G. McDonald	Art Unit 1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/417,357.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,360,765 to Kondo et al. (Kondo) in view of US 5,178,739 to Barnes et al. (Barnes) and US 5,858,859 to Chen (Chen).

For claim 1, Applicant requires a method for treating a silicon substrate comprising: placing the substrate into a sputtering chamber, performing a sputtering step to simultaneously dry clean and amorphize the substrate surface using a first sputtering chamber, and in situ depositing a titanium film on the amorphized silicon

substrate by using the same chamber wherein the sputtering chamber is an ionized metal plasma equipment.

For claim 2 Applicant requires the titanium film to be deposited at about 540°C.

Kondo discloses a method for forming electrodes (abstract). The method involves providing a silicon substrate 1. The substrate is processed in a sputtering system (Figure 2). The system contains a chamber 23. In the chamber, there is an etching station 13 and a sputtering station 15 for forming titanium (col. 4, 1. 56-58). At the etching station, the silicon substrate is subjected to argon gas to dry-clean the substrate and amorphize the silicon by sputtering (col. 4, 1. 33-55). As can be seen from Figure 2, both processes are performed in the same sputtering chamber 23. Kondo indicates that the titanium is deposited at a temperature of about 500°C, which is about 540°C. Kondo does not indicate that the argon is ionized and that titanium atoms sputter from the target and deposit on the substrate (col. 4, 1. 63-67).

Kondo does not teach IMP. Kondo also does not teach in situ deposition.

Barnes discloses that when sputtering, it is advantageous to utilize an RF coil in the chamber because it will result in a high density plasma and ionize sputter neutrals which allows the plasma to be more evenly distributed throughout the chamber (col. 2, 1. 59-63). The benefit of an evenly distributed plasma is that the uniformity of the deposition can be controlled (col. 3, 1. 1-3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Kondo to utilize a coil in the chamber

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because of the desire to control the uniformity of deposition. The use of the coil will result in IMP.

Chen teaches depositing in situ a titanium film after or simultaneous with amorphization. (Column 3 lines 20-59) The benefit of performing the Ti deposition in situ is that it allows for simplification of the manufacturing process. (Column 4 lines 22-24)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Kondo to perform the deposition in situ in the same chamber as taught by Chen because of the desire to perform the deposition in the manner conventional within the skill in the art.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-11 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 of U.S. Patent No. 6,254,739 in view of Takahashi et al. (U.S. Pat. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-4 of U.S. Pat. 6,254,739 teach the same process as required by the currently pending claims except for having the first bias greater than the second bias and utilizing different chambers.

Regarding the biases, the claims are not limitative to the level of bias so the claims read on the first bias being greater than the second bias.

Regarding the different chambers, Takahashi teach utilizing different chambers for the different processes. (Column 4 lines 3-16)

The motivation for utilizing the features of Takahashi et al. is that it allows use of different gases and different degrees of vacuum in the processes. (Column 4 lines 3-16)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the claims of U.S. Pat. 6,254,739 by utilizing the features of Takahashi et al. because it allows for use of different gases and different degrees of vacuum in the processes.

Claims 1-11 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 of U.S. Patent No. 6,743,485. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-6 of U.S. Pat. 6,743,485 teach the same process as

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required by the currently pending claims except for having the first bias greater than the second bias and utilizing different chambers.

Regarding the biases, the claims are not limitative to the level of bias so the claims read on the first bias being greater than the second bias.

Regarding the different chambers, Takahashi teach utilizing different chambers for the different processes. (Column 4 lines 3-16)

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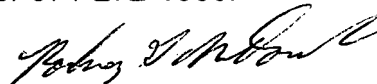
Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the claims of U.S. Pat. 6,743,485 by utilizing the features of Takahashi et al. because it allows for use of different gases and different degrees of vacuum in the processes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney G. McDonald whose telephone number is 571-272-1340. The examiner can normally be reached on M-TH with every Friday off..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Rodney G. McDonald
Primary Examiner
Art Unit 1753

RM
April 16, 2007